



Storage Resource Reporting Proposal

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5 proposed requirements

- Enable storage accounting
 - -> Wed afternoon
- Enable experiment operations
- Requirement 0 for all systems
- Requirements 1-4 for WLCG storage providers

R0: All services

- Storage services must provide, somehow,
 - Total used space for each independent area
 - How many such areas are needed?
 - Is one used space number enough?
 - List of files stored

R1: used/free for “spaces”

- Storage systems should provide **total used** and **total free** space for all **distinct spaces** available to the experiment, by at least one non-SRM protocol.

R1: support in storage systems

Storage	Version	GridFTP	HTTP/DAV	Xrootd	Namespace association
dCache	>3.2	YES	COMING		Possible
DPM	>1.9.0	NO	YES	COMING	Obligatory
EOS			YES**	YES	
CASTOR	-	-	-	YES	Not relevant
StoRM			YES	YES*	
xrootd				YES	Possible

R2: “the json file”

- Provide a structured data file holding space and, possible, occupancy info
 - Used to bootstrap the accounting system
- If storage systems satisfy R1, they have the info required to satisfy R2
 - They just need to generate the file
- Decisions
 - Naming/path conventions
 - Access control

Input: R1 & R2

	Summary info	Subdir reporting	Detail storage dump
Alice	Via all supported protocols		Not required, provided find/lis works on Xrootd protocol
Atlas	Via at least one protocol or via json		Path. Optional - size, atime. Once per month
CMS	Via at least one protocol, or json if protocol is not possible		Path, size, checksum
LHCb	Via at least one protocol protocol, json (?? tbc)		Path, size, ctime. Once per week
WLCG	Requires json file		Not required

R3: subdir resource reporting

- Provide used and free space on subdirectories, in particular any entity on which a restrictive quota has been applied. This will allow clients to understand if they can write.

Input: R3 subdir reporting

	Summary info	Subdir reporting	Detail storage dump
Alice	Via all supported protocols		Not required, provided find/lis works on Xrootd protocol
Atlas	Via at least one protocol or via json		Path. Optional - size, atime. Once per month
CMS	Via at least one protocol, or json if protocol is not possible		Path, size, checksum
LHCb	Via at least one protocol protocol, json (?? tbc)		Path, size, ctime. Once per week
WLCG	Either via at least one protocol or json		Not required

R4: storage dumps

- Provide full storage dumps
- Full storage dump enumerating each file. The aim is to allow a single utility per storage system which will work for all interested experiments. The following information represents the union of the attributes requested by Atlas, CMS & LHCb.
 - path
 - size
 - atime
 - ctime
 - checksum type & value

Input: R4 storage dumps

	Summary info	Subdir reporting	Detail storage dump
Alice	Via all supported protocols		NO, provided find/lis works on Xrootd protocol
Atlas	Via at least one protocol or via json		YES. Path. Optional - size, atime. Once per month
CMS	Via at least one protocol, or json if protocol is not possible		YES. Path, size, checksum
LHCb	Via at least one protocol protocol, json (?? tbc)		YES. Path, size, ctime. Once per week
WLCG	Either via at least one protocol or json		NO

Summary

- 5 proposed requirements
- Principal remaining discussion points
 - “json file”
 - Storage dumps
- Full text
 - <https://docs.google.com/document/d/1yzCvKpxsbcQC5K9MyvXc-vBF1HGpBk4vhjw3MEXoXf8/edit#>